



FFIII - Nye trends: Baggrund for udvikling af beslutningsværktøjer

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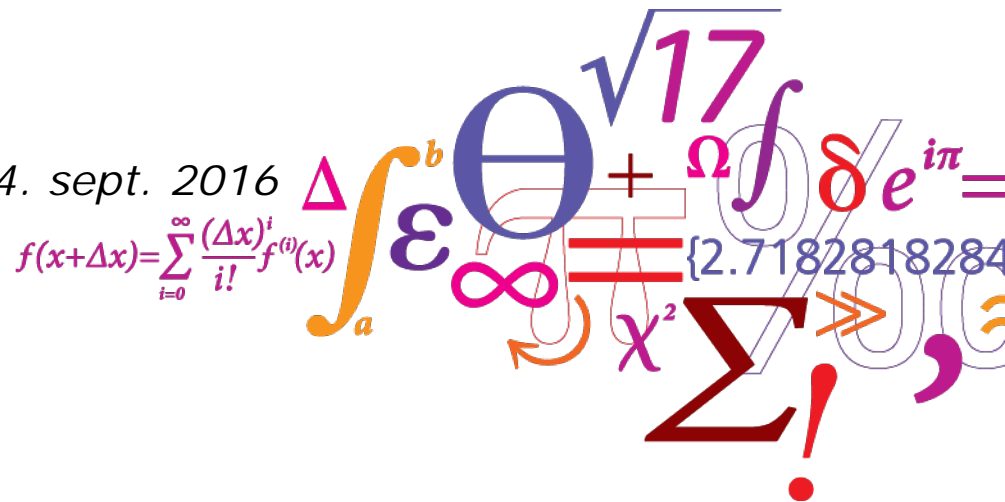
FFIII – Nye trends

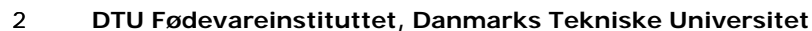
Baggrund for udvikling af beslutningsværktøjer

Tina Beck Hansen

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Strategidag mellem FVST og DTU, 14. sept. 2016

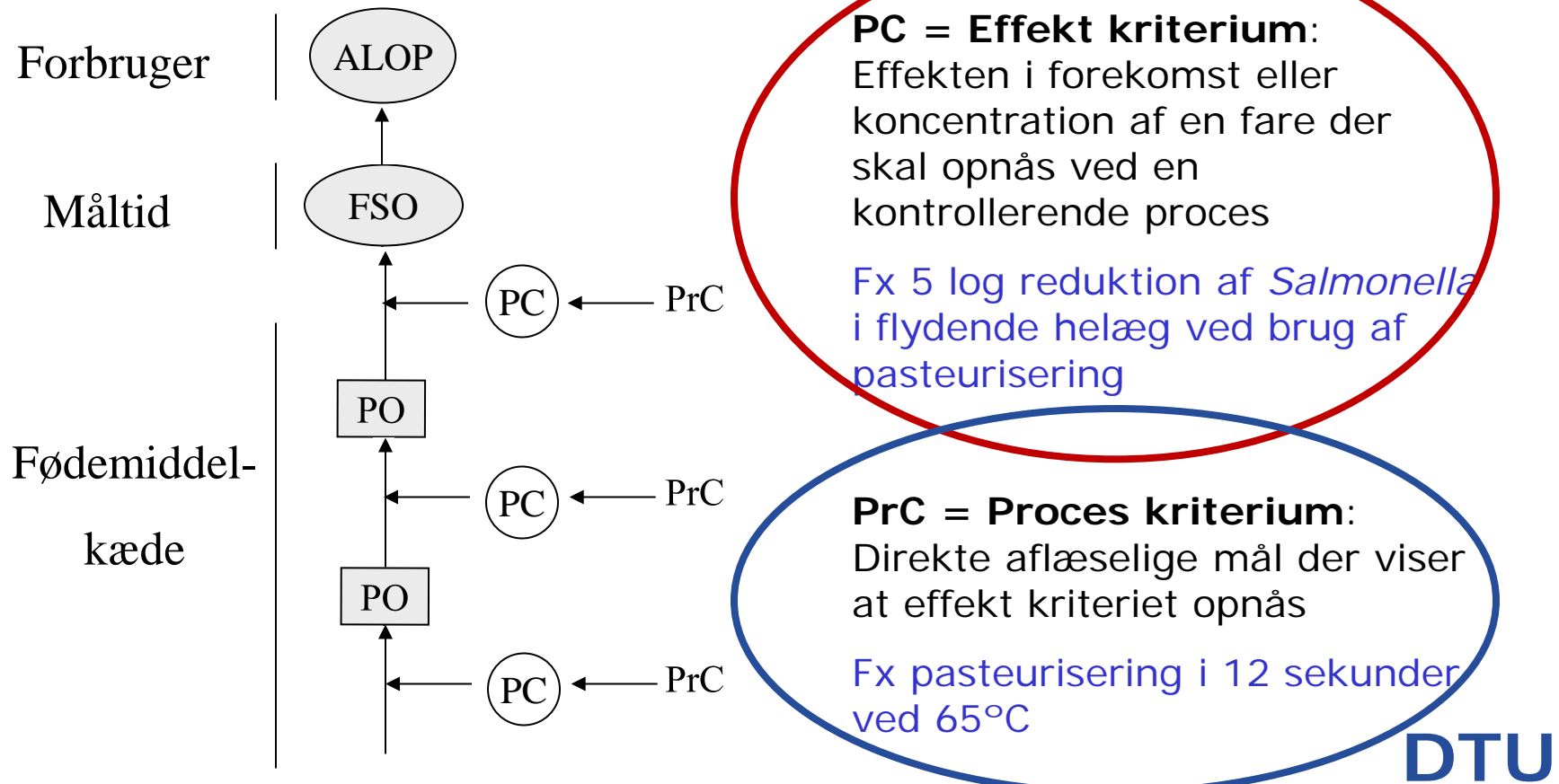




Forudsætning

Først: Risikohåndtering, Codex begreber

FVST



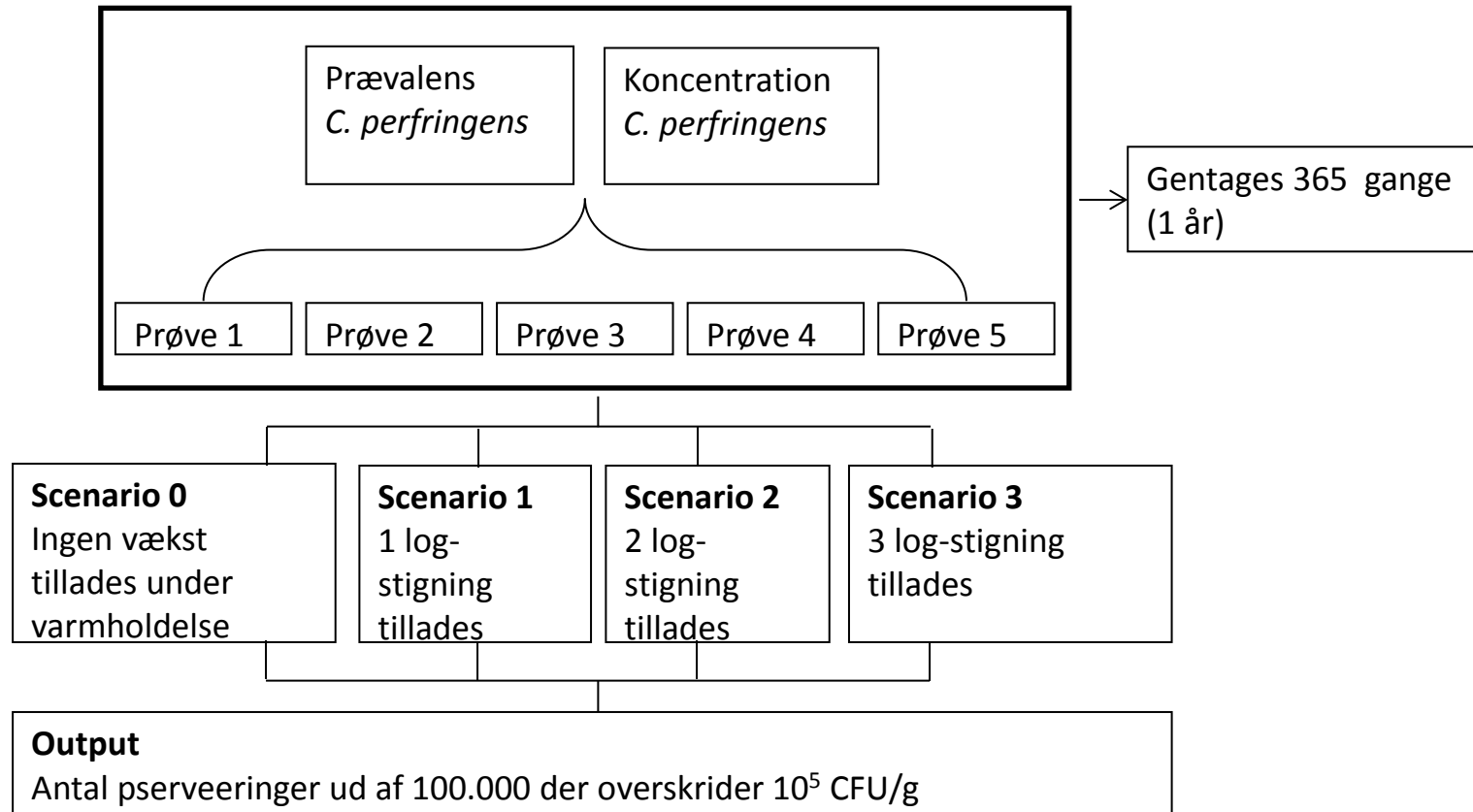
Kilde: Jens Kirk Andersen (2010)

IT-værktøjer til brugerne

Dernæst: Beslutningsværktøjer, matematiske modeller

- Varmholdelse
 - Alternativer til min. 65°C
- Nedkøling
 - Alternativer til 65 til 10°C på maks. 3 timer
- Varmebehandling
 - Alternativer til min. 75°C

Risikovurdering – simuleringsmodel

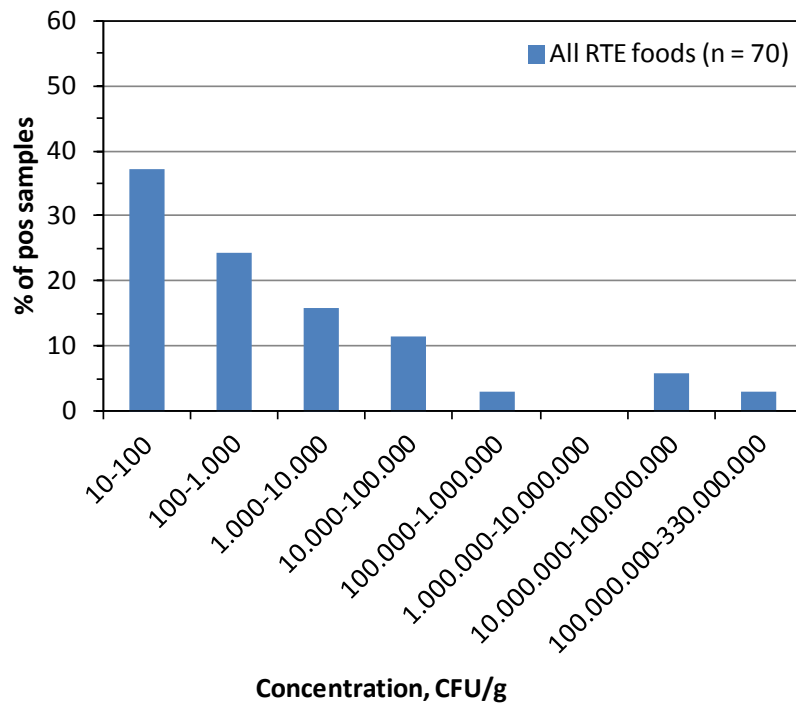


Risikovurdering – input data *C. perfringens*

- FVST rapport om forekomst af *Bacillus cereus*, *Clostridium perfringens* og *Staphylococcus aureus* i varmholdte retter i 1993 – 1997
 - N = 1262, *C. perfringens* pos = 3 (prævalens 0,24 %)
 - min., middel, maks. = 10, 1200, 2700 cfu/g
- FVST database fra før 2003
 - Eksisterer ikke mere!
- FVST database, færdigretter 2003 – 2011
 - N = 3712, *C. perfringens* pos = 70 (prævalens 1,9 %)

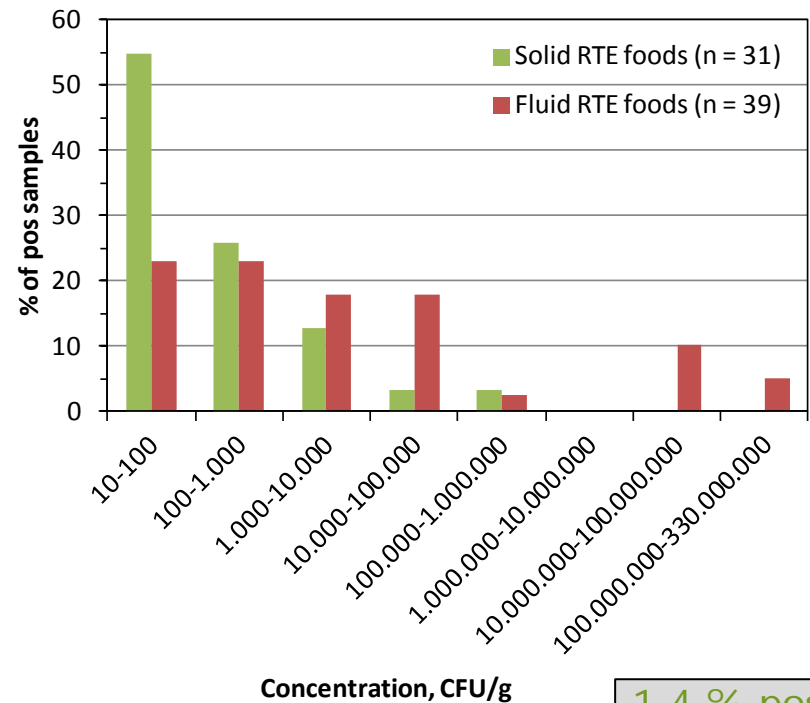
Koncentrationsfordeling, alle i 2003 – 2011

***C. perfringens* in RTE, 2003 - 2011**



1.9 % pos

***C. perfringens* in RTE, 2003 - 2011**

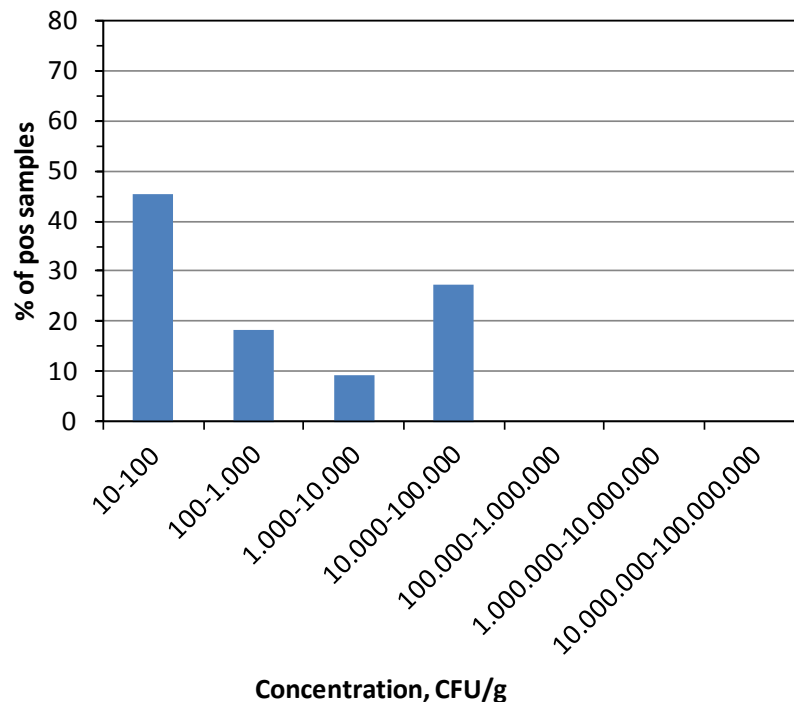


1.4 % pos

2.6 % pos

Koncentrationsfordeling, 3 projekter i 2008

***C. perfringens* in RTE, 2008 (n = 11)**

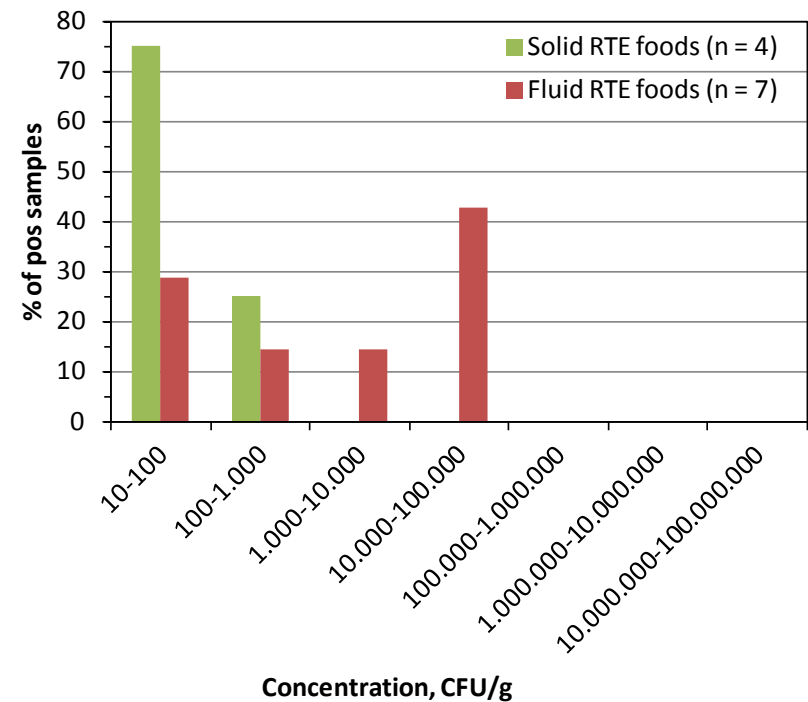


0.31 – 1.12 % pos

0.05 – 0.69 % pos

Chi², P = 0.10

***C. perfringens* in RTE, 2008**



0.10 – 0.95 % pos

0.42 – 2.10 % pos

Chi², P = 0.09

Risikovurdering – output

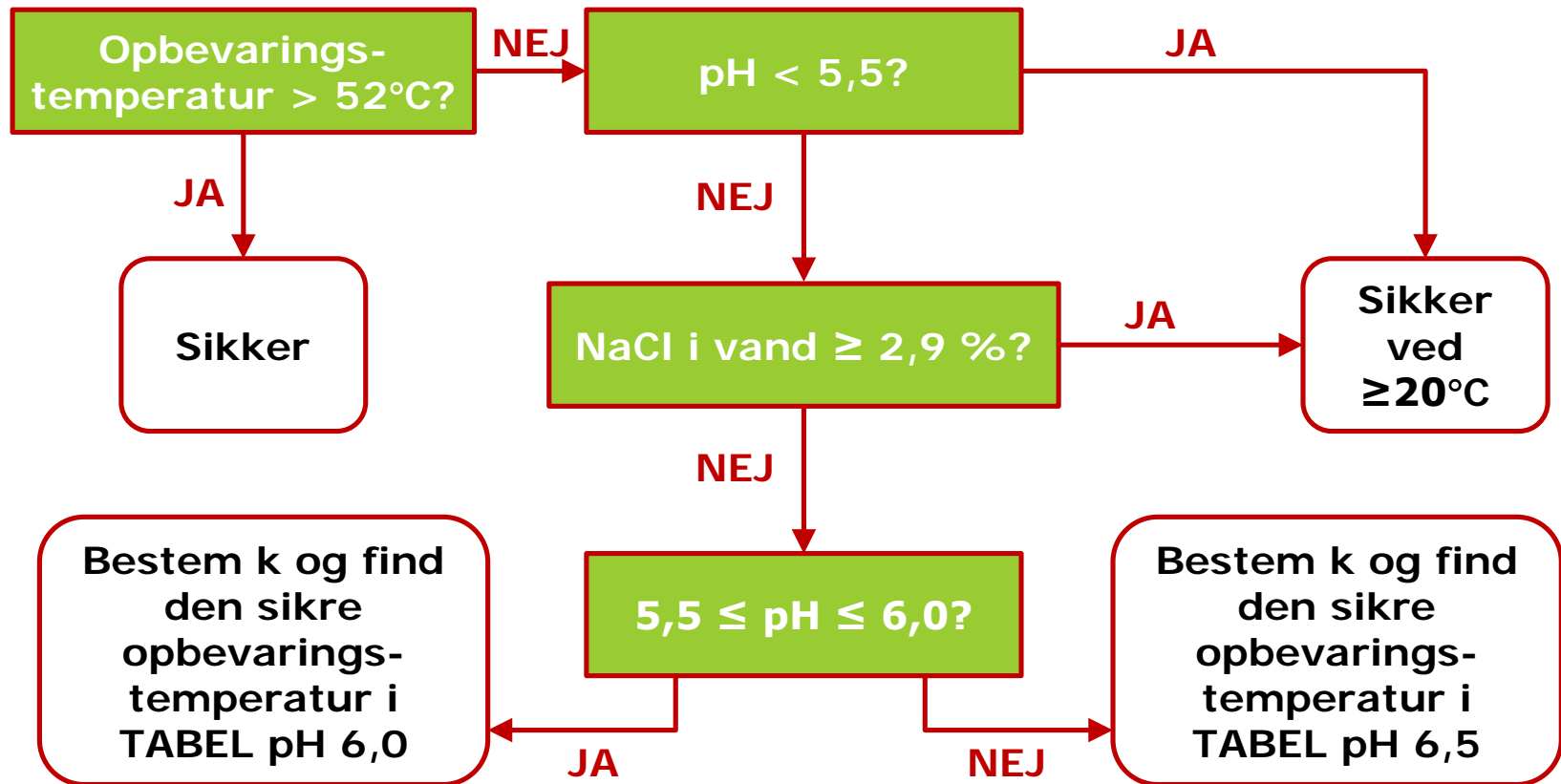
Number of 100.000 servings that exceed 10^5 CFU/g

Data	No growth	1 log-increase	2 log-increase	3 log-increase
2003 – 2011	276	492	789	1234
2008 – all	47	184	245	363
2008 – solid	0	0	13	112
2008 – fluid	124	479	617	765

PC???

Beslutningsværktøj –

PC = maks. 1 log-stigning af *C. perfringens*



Næste step

- Samme øvelse for *B. cereus*
- FVST rapport om varmholdte retter 1993 – 1997
 - N = 1309, *B. cereus* pos = 10 (prævalens 0,76 %)
 - min., middel, maks. = 10, 1500, 11000 cfu/g
- Foreløbige tal fra databasen 2003 – 2011
 - N > 41000 før rensning
 - N = 7263, *B. cereus* pos 4,7
 - Koncentrationsfordeling:

